

What is claimed is:

1. An ambient temperature stable integrated circuit wafer having an active side adhered to an underfill composition, said underfill composition comprises a photo-cured, one-part composition comprising a one-part mixture of:
  - a liquid photocurable acrylate component,
  - a polyfunctional epoxy resin,
  - at least one photoinitiator,
  - a non-electrically conductive filler, and a
  - non-fluxing heat activated epoxy curative, wherein the said underfill in the solid state exhibits a flexural modulus of from 1000 to 5000 MPa at 25 °C, and a coefficient of thermal expansion below the glass transition temperature of said underfill composition of from 15 to 50 ppm/°C.
2. A liquid, 100 % solids, non-self fluxing, one-part underfill, comprising:
  - from 5% to 30% of a monofunctional unsaturated photocurable component,
  - from 10% to 45% of a polyfunctional epoxy resin,
  - from 0.3% to 3% of at least one photoinitiator,
  - from 40% - 70% of a non-electrically conductive filler,
  - said underfill in the thermoset state exhibiting a flexural modulus of from 1000 to 5000 MPa at 20 °C, and a coefficient of thermal expansion below its glass transition temperature of from 15 to 50 ppm/°C.
3. The underfill composition according to claim 2 wherein said photocurable component includes at least one compound from the group consisting of C<sub>3</sub>-C<sub>12</sub> alkyl esters of acrylic acid and C<sub>1</sub>-C<sub>4</sub> alkyl-substituted C<sub>3</sub>-C<sub>12</sub> ester of acrylic acid.
4. The underfill composition according to claim 2 wherein said photocurable component is selected from at least one of the group consisting of tetrahydrofurfuryl acrylate, tetrahydrofurfuryl methacrylate, pentaerythritol monomethacrylate, pentaerythritol monoacrylate, trimethylolpropane monomethacrylate, trimethylolpropane monoacrylate, a cyclic alkylol formal acrylate, and a ketal acrylate.

5. The underfill according to claim 2 wherein said photocurable component is an unsaturated oligomer selected from the group consisting of bis-phenol-polyether acrylates, vinyl ether capped oligomer, acrylated epoxy resin, ethylenically unsaturated polyalkylethers, poly(cyclic) ether acrylates and polycyclic(ether) acetal acrylate.
6. The underfill according to claim 4 further comprising a mono-unsaturated acrylate monomer, wherein said oligomer has a number average molecular weight of from 500 to 5,000.